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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,838	03/30/2001	Benjamin P. Olding	M-11119 US	6117

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EXAMINER
JELINEK, BRIAN J

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/823,838	OLDING ET AL.
	Examiner	Art Unit	
	Brian Jelinek	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>18 January 2005</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-13* is/are allowed.

6)☒ Claim(s) *14,15 and 17-19* is/are rejected.

7)☒ Claim(s) *16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Amendment

The Examiner respectfully submits a response to the amendment received on

1/18/2005 to application no. 09/823,838 filed on 3/30/2001 in which claims 1-19 are

currently pending.

Drawings

The Examiner thanks the Applicant for making corrections to the drawings.

Arguments

The Applicant's arguments have been fully considered but they are not persuasive.

Please refer to the following office action, which clearly sets forth the reasons for non-

persuasiveness.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a
foreign country or in public use or on sale in this country, more than one year
prior to the date of application for patent in the United States.

Claims 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by

Yoneyama (JP 04-313949).

Regarding claim 14, Yoneyama teaches a method for generating electrical

signals representing an image in a digital image sensor (Prior Art, 0002), comprising:

generating digital signals as k-bit pixel data (Method to Solve the Problem, 0008, read

output level) at a plurality of exposure times (Fig. 6), said pixel data being associated

with each pixel element in a sensor array of pixel elements and corresponding to a level

of an analog signal indicative of a light intensity impinging on said pixel element;

providing a data memory for storing an m-bit time index value and said pixel data for

each of said pixel elements, said time index value indicating one of said plurality of

exposure times in which said pixel data exceeds a predetermined threshold level and

for which said pixel data is stored, said time index value including a t-bit threshold

indication for each of said pixel elements encoded within said m-bit time index value

(Operation, 0009); determining if said pixel data of a first one of said pixel elements

exceeds said predetermined threshold value (Method the Problem, 0008, standard

level; Operational Example, 0023, ½ of the saturated output); if said pixel data exceeds

said predetermined threshold value at exposure times before a last one of said plurality

of exposure times (Fig. 6, cases A and B; Operational Example, 0015 and 0016),

storing said time index value in m bits (Method to Solve the Problem, 0008, number of

reading operations) in a location in said data memory associated with said first one of

said pixel elements having a first value indicating said exposure time; and storing the

lower r bits of said pixel data in a location in said data memory where r=k+t-m (Method

to Solve the Problem, 0008, read output level, where r=k when t=m); and if said pixel

data does not exceed said predetermined threshold value (Fig. 6, case D), storing said

time index value in t bits in said location in said data memory associated with said first

one of said pixel elements having a second value, and storing k bits of pixel data in said

data memory (Operational Example, 0020; Fig. 6, case D).

Regarding claim 15, Yoneyama teaches if said pixel data does not exceed said

predetermined threshold value before said last one of said plurality of exposure times,

storing said k bits pixel data in said data memory for pixel data recorded in said last one

of said plurality of exposure times (Operational Example, 0020; Fig. 6, case D).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Yoneyama (JP 04-313949) in view of Reitmeier et al. (U.S. Pat. No. 6,560,285).

Regarding claim 17, Yoneyama teaches generating at a plurality of exposure

times digital signals in k-bit as pixel data (please see the 102 rejection of claim 14).

Yoneyama does not teach companding the pixel data.

However, Reitmeier et al. teaches companding k-bit pixel data into h bits, h being

less than k and storing (some form of buffering is inherent in transporting the data) the

lower r bits of the pixel data in a data memory comprises storing the lower h-1 bits of

said pixel data. In particular, Reitmeier et al. teaches encoding 10-bit image information as an 8-bit image signal with a compander in order to provide an image signal that is suitable to be transported according to lower dynamic range techniques (col. 1, line 54-col. 2, line 7). Further note that, in the case where r=k and h=k-1, the lower h-1 bits would be stored since h bits are stored. One of ordinary skill in the art would have provided the compander of Reitmeier et al. in order to map the high dynamic range image information from an image sensor to a lower dynamic range suitable for transportation (col. 1, line 54-col. 2, line 7). As a result, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the compander of Reitmeier et al. for the purpose of performing the slight compression of the image signal in order to map the high dynamic range image information of Yoneyama's image sensor to a lower dynamic range image signal suitable for transportation (col. 2, lines 5-10).

Regarding claim 18, please see the 103 rejection of claim 17 and note that when r=k, for a both conditions when pixel data exceeds and does not exceed a predetermined threshold value before a last one of a plurality of exposure times, h bits of pixel data will be stored in data memory.

Regarding claim 19, please see the 103 rejection of claim 17.

Allowable Subject Matter

Claims 1-13, and 16 are allowable or would be allowable if rewritten to overcome any and all objections.

Regarding claim 1, the reason for allowance is as follows: the prior art of record

does not disclose or fairly suggest the combination of limitations claimed in claim 1, in particular there is no suggestion for storing the lower r bits, where r=k+t-m when a data memory includes k+t bits, corresponding to Pixel C and Pixel D in Fig. 6 of the instant invention.

Regarding claims 2-13, the reason for allowance is as follows: the claims depend from claim 1.

Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims because the prior art of record does not disclose or fairly suggest the combination of the limitations of claim 14 wherein r=k-1.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Jelinek whose telephone number is (571) 272-7366. The examiner can normally be reached on M-F 8:00 am - 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached at (571) 272-7950. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-7366.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Jelinek
3/17/2005

TUAN HO
PRIMARY EXAMINER